Fig. 16. Interlacing double spirals, leaving spaces which afterwards become dots. (After Barry.)
Fig. 17. Same in a more advanced stage. (Id. *loc. cit.*)
Fig. 18. Dotted duct thus perfected. (Barry, *loc. cit.*)
Fig. 19. Fibres from *T. latifolia* bent and thickened, in an advanced stage.
Fig. 20. Dotted vessel from *Arundo Donax*, the black lines formed by adherent portions of vegetable matter which filled up the spaces separating the surrounding cells and vessels.
Fig. 21. Dotted duct from *Sambucus nigra.*
Fig. 22. Transverse section of dotted tube in *Aspidium Filix mas*, showing the rows of dots corresponding to projecting portions of surrounding cells.

XVII.—*The Crustacea of Ireland.* By Wm. Thompson, Esq., Vice-Pres. Nat. Hist. Society of Belfast.

[Continued from vol. x. p. 287.]

Order Decapoda.

2nd Section. Decapoda Anomoura.

Lithodes Maia, Leach, Mal. pl. 34.
L. arctica, *Edw. Crust.* t. ii. p. 186; *Desm. Consid. Crust.* p. 160. pl. 25.
Horrid Crab, *Penn. Brit. Zool.* vol. iv. p. 6. pl. 8. f. 14, edition 1812.

Templeton says of this species—"Found on the coast of the county Wexford: a specimen thence is in Trinity College Museum [Dublin]. It is called by the people *craban.*"

I have not seen any Irish example of this crab, but am indebted to Dr. Wylie of Ballantrae, Ayrshire, for a very fine specimen which was taken in a herring-net there in the summer of 1838, in water from twenty to thirty fathoms in depth. It was brought to Dr. Wylie by the fishermen as a species which they had never before met with.

Pagurus Bernhardus, Edw. Crust. t. ii. p. 215; Penn. vol. iv. p. 30. pl. 18; Desm. p. 178. pl. 30. f. 2.
P. streblonyx, *Leach, Mal.* pl. 26. f. 1—4.

Hermit-crabs of this species are very common in univalve shells around the coast of Ireland. Leach mentions their "first occupying the shells of the common periwinkle or trochus" (Art. Crustaceology in Edin. Encyclop.); but some examples in my collection are much smaller than those contained in the species just named. They are in the *Littorina retusa, Turritella terebra,* and *Nasa macula*—univalves from this size up to that of the largest *Buccina* are commonly inhabited by the *P. Bernhardus*: a specimen of this crab from the coast of Down, in my collection, is $6\frac{1}{2}$ inches in length. Samouelle speaks of the shell occupied by the *Pagurus* being "destined to preserve the body from injury, and to guard them from the attacks of fishes, which would otherwise devour them." Entom. Compend. p. 92. In this latter respect the shells are of little service, as I have remarked *Paguri* very commonly in the stomachs of various species of fishes, but especially in the omnivorous and voracious cod: all the moderate-sized and large hermit-crabs which have thus occurred to me

must have been dragged from their shells, which, in no instance that I recollect, were found in the stomach of the fish along with them.

One of these crabs inhabiting a *Buccinum undatum* was brought up alive in the dredge from a depth of fifty fathoms off the Mull of Galloway. See 'Annals,' vol. x. p. 21.

Pagurus Prideaux, Leach, Mal. pl. 26. f. 5 and 6.
P. Prideauxii, *Edw. Crust.* t. ii. p. 216.

Has been taken by Mr. Hyndman and myself when dredging in Strangford and Belfast loughs, and in the open sea off Dundrum, county Down, and in every instance occupying the shell invested by the *Adamsia maculata* (*Actinia maculata*, Adams). Leach states that "Mr. Prideaux has observed it in a vast variety of habitations, even in the tubes of the *Dentalia* and in the shell of *Scaphander lignarius* [*Bulla lignaria*]." To me this appears singular, for among the very numerous specimens of *Paguri* in my collection from all quarters of the Irish coast, and found inhabiting shells of various species, not a *P. Prideauxii* occurs, except in connection with the *Actinia* already named. This is a remarkable fact. The connection of the two species is surely more than accidental. It may be further stated, that in the localities whence *P. Prideauxii* was obtained, *P. Bernhardus* is very common; and in the loughs mentioned, a few individuals of two or three other species of *Paguri* have been procured.

"*Pagurus erinaceus*."

In the collection of Mr. J. V. Thompson is an Irish specimen of a Pagurus considered as undescribed, and so named by him.

Porcellana platycheles, Edw. Crust. t. ii. p. 255; Desm. p. 195. pl. 34. f. 1.
Great-clawed crab, *Penn. Brit. Zool.* vol. iv. p. 9. pl. 6. f. 2.

This littoral crab seems to be a local species, but plentiful where it does occur; Templeton notices it as found on the "Whitehouse shore by Mr. James Grimshaw, Jun." On the beach near Carrickfergus, a few miles distant from that locality, it was procured in abundance in June 1835, by the late Mrs. Patterson of Belfast, who subsequently obtained it near Cultra, on the county Down shore of the bay. Mr. R. Ball states that this species is very abundant on the shores of the county Dublin, and especially at Portmarnock: he remarks that in once turning over a large stone here in cold wintry weather, the under side was entirely covered with these crabs, "packed as close to each other as tiles on a roof!" In June 1838, I found the *P. platycheles* in numbers beneath large stones at the island of Lambay, off the Dublin coast—on the 1st of this month, the females abounded in ova. At Lahinch, county Clare, this species occurred to Mr. E. Forbes and myself in July 1840, between tide-marks, and beneath the same stones *P. longicornis* was met with alive.

Porcellana longicornis, Edw. Crust. t. ii. p. 257.
Long-horned crab, *Penn. Brit. Zool.* vol. iv. p. 5. pl. 1. f. 3.

This species chiefly inhabits deep water on our coasts, but in some localities lives on shores exposed at the ebb of every tide. It has been dredged up in abundance in the loughs of Strangford and Belfast, and in the open sea off the north-east coast of Ireland in

1834, and subsequently by Mr. Hyndman and myself. It is generally found in connection with large shell-fish brought up from deep water, such as oysters, horse-mussels (*Modiolus vulgaris*) or clams (*Pecten maximus*), and shelters itself under any extraneous matter or natural roughness (as between the testaceous layers of an old oyster) sufficient for the purpose. Mr. R. Ball's collection contains specimens from Youghal* and Dublin Bay:—on the shore of the island of Lambay I have taken it alive, as well as at Lahinch on the western coast.

Specimens of this crab have been sent me from the coast of Wigtonshire, Scotland, by Captain Fayrer, R.N.

Order Decapoda.

3rd Section. Decapoda Macroura.

Galathea strigosa, Edw. Crust. t. ii. p. 273; Desm. p. 189. pl. 33. f. 1.
G. spinigera, *Leach*, *Mal.* pl. 28 B.
Plaited lobster, *Penn. Brit. Zool.* vol. iv. p. 24. pl. 15.

Would appear to be distributed around the coast, but everywhere in very limited numbers. Templeton notes it as found at "Bangor, co. Down, November 1819, and in the stomach of a cod-fish." It is enumerated in Mr. J. V. Thompson's catalogue, his specimen being probably from Cork. Two were captured by Mr. Hyndman and myself, when dredging in Strangford lough in October 1834; and others have subsequently been added to my cabinet from the rocky coast of Antrim, as from Island Magee; Glenarm; the vicinity of the Giant's Causeway; one or two only from each place: at the last-named, a couple of individuals, which were brought to me alive in the month of June, were captured under stones at low water. The species may probably resort to the shallows to deposit their ova, which in these examples were ready for exclusion. The Ordnance collection contains the *G. strigosa* from Belfast bay. Mr. R. Ball has a specimen from Dublin bay:—its length of body is $4\frac{3}{8}$ inches; arm from basal insertion to end of claw $4\frac{6}{8}$ inches.

In March 1835, a *G. strigosa* from Portpatrick was kindly sent to me by Captain Fayrer, R.N.; and on the beach at Newhaven, near Edinburgh, I once picked up a very large one, which had probably been thrown out of some of the fishing-boats. At Ventnor, in the Isle of Wight, one which had been captured in a crab-pot was brought to me; it was $5\frac{1}{2}$ inches in length from the points of the claws to the extremity of the tail-plates.

Both the young and adult specimens in my cabinet are highly attractive, from still retaining their fine red and bright blue markings.

Galathea rugosa, Leach, Mal. pl. 29; Edw. Crust. t. ii. p. 274.
Astacus Bamffius, Long-clawed lobster, *Penn. Brit. Zool.* vol. iv. p. 23. pl. 24.

Is noticed as Irish by Mr. J. V. Thompson. The specimens which I have seen were mostly found in the stomach of the cod-fish. Dr.

* Mr. J. V. Thompson mentions a "species of *Porcellana*" being in "abundance in the deep water of the harbour of Cove." Ent. Mag. vol. iii. p. 275. The Irish species contained in his collection (Royal College of Surgeons, Dublin) is the *P. longicornis*—it is named *P. Linneana*.

J. L. Drummond thus obtained two of them from fish brought to Belfast market. In a cod taken near Carrickfergus, I once found a fine male *G. rugosa*; its length of body from base of eyes to extremity of tail-plates, 3 inches; its arm from base to point of claw, $5\frac{1}{2}$ inches. Another individual was found in the mouth of a haddock captured at Killough, county Down. Mr. R. Ball in one instance procured three specimens from the stomach of a cod taken at Youghal. Dr. Leach remarks "that the *G. rugosa* appears to be a very rare species in Britain," and so may it likewise be considered on the Irish coast. It is probably one of those species not to be found in numbers anywhere.

A *G. rugosa* has been kindly sent to me from Portpatrick by Captain Fayrer, R.N. Several small individuals were dredged alive in water from 110 to 140 fathoms in depth off the Mull of Galloway. See 'Annals,' vol. x. p. 23. None of them exceeded $1\frac{1}{2}$ inch in length of body.

Among the genera of Crustacea which possess a luminous property when living, *Galathea* is included, and the species particularized is the *G. amplectens*, Fabricius (McCulloch's West. Isles, Scotland, vol. ii. p. 192), observed by Sir Joseph Banks on the coast of Brazil. It is perhaps not worth remarking, that in a dead specimen of *G. rugosa* I observed the same property. On the evening of the second day after it had been kept in a warm room, the entire soft portion of its under surface was highly luminous.

Galathea squamifera, Leach, Mal. pl. 28 A; Edw. Crust. t. ii. p. 275.

Is marked Irish in Mr. J. V. Thompson's catalogue. It is our most common species of *Galathea*, and is found on all sides of the island. It is not uncommonly dredged up by us in the loughs of Strangford and Belfast, the specimens being generally of a small size. In the Ordnance collection are examples from Portrush, near the Giant's Causeway. At Lahinch, county Clare, two of the *G. squamifera* were procured by us under stones between tide-marks. Specimens from Youghal and the western coast are in Mr. R. Ball's collection.

Captain Fayrer, R.N., has favoured me with this species from Portpatrick.

Galathea nexa, Embleton, Proceedings Berwickshire Club, p. 71. pl. 1.

"I have found it in the stomachs of cod-fish brought from the coasts of Down and Antrim to Belfast market; and in Dr. Drummond's collection are specimens which were similarly procured. A comparison of one of these with an original specimen in Dr. Johnston's possession, proved (what from its agreement with the description and figure I had previously little doubt of) the identity of the species."—W. T. in 'Annals,' vol. v. p. 255.

Palinurus vulgaris, Leach, Mal. pl. 30; Edw. Crust. t. ii. p. 292; Desm. p. 184. pl. 32.

Astacus homarus, *Penn. Brit. Zool.* vol. iv. p. 22. pl. 12.

The spiny lobster is found sparingly on the north, but commonly on the south coast. Smith in his 'History of Kerry' remarks that one side of Dingle bay "is noted for having very large cray-fish;" and

in his 'History of Cork' states that "we have of them in great plenty from one to six or eight pounds weight on the south coast of Ireland." Rutty, in his 'Natural History of the County of Dublin,' says of the *Palinurus*, "this, though common on their tables at Cork, and a more delicate food than the lobster, is rare in Dublin, though sometimes brought to our market from Munster, and sometimes from England." Mr. R. Ball informs me that it is still occasionally brought to Dublin, and that it is at the present time rather commonly taken at Youghal along with lobsters, and of the size noticed by Leach—from 18 to 20 inches in length of body. It is considered coarse food at the last-named place. A specimen obtained many years ago at Magilligan, county Londonderry, is in Mr. Hyndman's collection: one or two have subsequently been procured there by the Ordnance Survey, as well as on the coast of Donegal. A specimen captured in a crab-pot at Carrickfergus is preserved in the Belfast museum.

Callianassa subterranea, Leach, Mal. pl. 32; Edw. Crust. t. ii. p. 309; Desm. p. 205. pl. 36. f. 2.

Cancer Astacus subterraneus, *Mont. Linn. Trans.* vol. ix. p. 88. pl. 3. f. 1 & 2.

"March 25, 1839.—On examining the contents of the stomach of several individuals of the *Platessa Pola*, which were taken early this morning off Newcastle (county Down), two of the larger arms of this species, so peculiar in form and still retaining their beautiful pink colour, were detected*."—W. T. in 'Annals,' vol. v. p. 256.

Astacus fluviatilis, Edw. Crust. t. ii. p. 330.

Craw-fish, *Penn. Brit. Zool.* vol. iv. p. 24. pl. 16. f. 1.

Inhabits the rivers in many parts of Ireland, but is generally stated to have been introduced to its recorded haunts from other quarters. Thus, Rutty in his 'Natural History of Dublin' remarks, "It has been sometimes found in this county, chiefly in gentlemen's ponds, and lately in the river near Finglass; but said to have been brought thither from Munster." In an essay on the parish of Templepatrick, written in 1824, it was stated, that "the lady of the late Arthur Upton introduced a stranger into our river called craw-fish. It was put into the brook at Templepatrick; it descended the Six-mile water, where it found a situation perfectly suited to its nature, deep water and banks of loam, which they excavate as lodgings for themselves and their young; they have increased to a very great multitude." This locality is about ten miles distant from Belfast. The date of the introduction of the cray-fish unfortunately is not given, nor are we informed whence they were brought. About thirty years before the essay was written, as I am informed by a venerable friend, cray-fish were plentiful some miles farther up the river than

* A species named "*Thalassina Montagui*" appears as Irish in Mr. J. V. Thompson's catalogue. It may be presumed to have been considered by that gentleman a new species, although "n.d." is not prefixed to it as in other cases of non-descripts. Only one species of this genus,—the *T. scorpioides*, a native of Chili,—is noticed in M. Edwards's Hist. des Crustaces (t. ii. p. 316).

where they are said to have been introduced. They were obtained in drains connected with the river near Doagh, and were not sought for as a marketable commodity, but served up at the table of the Antrim Hunt, to gratify the special palate of one of the knightly members of that body. About Florence Court, county Fermanagh, the cray-fish is abundant, but to this locality also, Lord Enniskillen tells me that the species is said to have been introduced many years ago from Queens-county:—of the correctness of this, as in former cases, there is no proof. About two years ago, however, I had 'ocular demonstration' of the introduction of the cray-fish into a pond at Lismoyne, the seat of a relative near Belfast. Early in September 1840, supplies taken in a small river in the county of Kildare were from time to time forwarded by the coach from Dublin to Belfast, and arrived in tolerable condition on the second day after capture; sometimes all were alive and apparently in good health; at others, perhaps one-fourth would be sickly or dead. At this period none contained ova, but a supply sent forward in the middle of November had them well-developed. It may be worth mentioning that these cray-fish were captured by a man wading up to his middle in the river, and thrusting his hands into their burrows in the banks—the water must be low at the time to render the holes visible. When caught they are generally put in a bag containing a little hay, and by being kept cool will live a few days out of the water. They are likewise taken in numbers by baiting with chickens' entrails a common creel or basket, which is let down by a rope to the bottom of the river in the evening, and next morning is pulled up so quickly, that the contained cray-fish having no time for escape are all captured.

Templeton says of the *Ast. fluviatilis* that it "inhabits several of our lakes and rivers; near Antrim, in the Six-mile water; in great abundance in a lake near Tullahan, county Monaghan." About Ballibay and Glaslough in this county it is now said to be met with. About Kill lake, lough Sheehan, &c. in the neighbouring county of Cavan it is found*. Mr. R. Ball states that the cray-fish is taken in the Royal Canal, about twelve miles from Dublin.

Mr. Patrick Doran, a well-known and intelligent collector of objects of natural history, gives me the following account of cray-fish as observed by him in Killymoon river, near Cookstown, county Tyrone, when the water was very low. They ascend from the

* In Mr. Hyndman's cabinet there is a specimen of a cray-fish considerably smaller and more delicately proportioned than the *A. fluviatilis*, and apparently a different species. It is believed by him to be Irish, but of this he is not certain. A very intelligent lady who saw the specimens above alluded to from Kildare—and which were the ordinary *A. fluviatilis*—remarked on their being much larger than those she had been accustomed to see in county Cavan. On Mr. Hyndman's *Astacus* being shown, it was stated that of the quantities which she had seen served up at table, none were ever larger. They were taken in one of the tributaries to lough Sheehan, about 1½ mile above the lake, and eight miles from the town of Cavan. I have as yet been unable to obtain cray-fish from this locality. Silence would perhaps have been more judicious, than the introduction of matter of this kind without any *positive* evidence.

deeper to the shallow parts to spawn. It is the office of the males to cater for the young. He has seen them catch minute fish and *Gammari*, bring them to the female and young, and break the fish up in pieces for the latter, so as to muddy the water in the process. On being disturbed, both sexes gather the young under their tails "as a hen gathereth her chickens under her wings," but a singular difference prevails between the sexes with regard to their manner of protecting their progeny. The male on being lifted out of the water retains the young under his tail; but the female on being captured, wiser than her lord, slaps them from her into their native element with great force, thus producing an effect which is likened by my informant to "a shower of rain upon the surface." He has repeatedly witnessed this different procedure of the two sexes.

Mr. R. Ball supplies me with the following note:—"Some years ago I kept a cray-fish for a considerable time in a shallow glass vessel, about 20 inches in diameter, and containing about two inches depth of water. This animal gradually acquired great viciousness, and would eagerly attack the fingers of any one who chose to put them within his range, pursuing the intruding digits round the boundaries of his demesne. After he had been thus a year in my possession, I was one day surprised to see a second cray-fish in the vessel, but on taking the intruder in my hand (believing it to have been placed in the vessel by a waggish relative) it proved to be the exuviæ of my old friend so perfect as to present his exact counterpart. Instead of his usual boldness, he now exhibited the most remarkable timidity, which continued for three or four days. He was at first quite soft and appeared considerably larger than usual, but gradually grew firmer, and on the fifth day felt to the touch as hard as usual, and advanced with open pincers to the attack of my finger, though evidently not without some little doubtfulness of his powers. Before the end of the week he was himself again, came on more boldly than ever and with greater effect, as his weapons were much sharper. He lived nearly two years with me, and during the whole time received no food excepting one or two worms. The water was never changed, but some was occasionally added merely to supply the loss by evaporation. I had found by previous experiments that cray-fish placed in pans with much water died, while those which were merely covered, or in such a manner that they could raise a portion of their bodies above the surface, lived as long as they were taken care of."

Homarus vulgaris, Edw. Crust. t. ii. p. 334.
Astacus marinus, *Desm.* p. 211. pl. 41. f. 1.
A. gammarus, *Penn. Brit. Zool.* vol. iv. p. 14. pl. 11.

Lobsters are in plenty around the rocky shores of Ireland. From the iron-bound north-eastern coast, great quantities of them are now sent by the regularly plying steamers to Glasgow. About Dublin, Mr. R. Ball informs me that the flounder (*Platessa flesus*) is used as bait for the lobster; and at Youghal, that the best plaice (*Platessa vulgaris*), which would bring a good price at market, are cut up for the same purpose.

The lightest looking and most tasteful lobster-pot that I have seen

is that used at the South Islands of Arran (off Galway bay). It is of the form and about the size of a tenor-drum. The frame-work consists simply of a small hoop at each end fastened to three almost equally light but tough pieces of wood, so as to present the drum form; over all a net is stretched, having an opening in the centre of each end. The bait used is fish.

Nephrops Norvegicus, Leach, Mal. pl. 36; Edw. Crust. t. ii. p. 336; Desm. p. 213. pl. 37. f. 1.
Norway Lobster, *Penn. Brit. Zool.* p. 23. pl. 13. f. 1.

Templeton says of this—"a rare species, but sometimes found in Belfast lough." I have heard of its being taken near Portaferry about the entrance to Strangford lough, and that it has been procured in numbers off Dundrum on the Down coast, but specimens have not come under my observation from any of these localities. It is brought in great quantities to Dublin as an article of food, and is chiefly used by the poorer people. Mr. R. Ball informs me that the species is very numerous in Dublin bay, near the Pigeon House, and that hence the town is supplied: he has taken the *Nephrops* along with echini and star-fish from the stomachs of cod bought in Dublin.

Specimens have been obligingly sent to me from the island of Holyhead (Wales) by Captain Fayrer, R.N.

Crangon vulgaris, Leach, Mal. pl. 37 B; Edw. Crust. t. ii. p. 341; Desm. p. 218. pl. 38. f. 1.
Astacus crangon, *Penn. Brit. Zool.* p. 26. pl. 16. f. 2.

The shrimp, being an article of food, is noticed in several of our old county histories. It is common on the sandy shores and adjacent saline marshes from north to south of Ireland. The western shore of Belfast bay was many years ago of a hard sandy nature, so as to admit of being ridden over by persons on horseback. At that period, as I am informed, shrimps abounded there, and were regularly sought for as objects of sale. At present this same part of the shore is soft and oozy, and the shrimps so very limited in number and small in size that they are never looked after. Although this species chiefly frequents sandy shores, I have occasionally seen it brought up in the dredge from deep water and at a considerable distance from land, in the loughs of Strangford and Belfast. Mr. R. Ball mentions that shrimps, though taken in large quantities at Youghal, are held in little esteem, but that the prawn (*Palemon serratus*), caught abundantly at spring-tides, is much thought of—this latter is called "shrimp" there; the former the "gray shrimp:" this term is also used in Smith's 'History of the County of Cork,' written nearly a century since.

"*Pontophilus spinosus*," Leach, Mal. pl. 37.
Crangon cataphractus, *Edw. Crust.* t. ii. p. 343.

In Mr. J. V. Thompson's collection there is a specimen bearing the former name, and marked as Irish. It is much to be regretted that the notice of the Irish Crustacea in this collection (now in the College of Surgeons, Dublin,) is limited to a single letter, the initial

"I" simply indicating them, as "F" does the foreign species. The native specimens were, I believe, chiefly derived from the harbour of Cove, whence those were brought upon which that naturalist founded his highly important and celebrated 'Researches into the Metamorphoses of the Crustacea.'

"*Processa* (*vel Nika*) *canaliculata.*"

Irish examples of this species are in Mr. J. V. Thompson's collection.

Athanas nitescens, Leach, Mal. pl. 44; Edw. Crust. t. ii. p. 366.

A single specimen was found under a stone between tide-marks at Lahinch, county Clare, by Mr. E. Forbes and myself in July 1840, as noticed in the seventh volume of this Journal.

Hippolyta varians, Leach, Mal. pl. 38. f. 6–16; Edw. Crust. t. ii. p. 371.

Is an inhabitant of deep water around the coast. Mr. J. V. Thompson's collection contains Irish specimens. This species has been dredged in Belfast and Strangford loughs by Mr. Hyndman and myself, and was similarly procured by our party in July 1840, in Clew and Roundstone bays on the western coast. In Dalkey Sound, Dublin bay, an *H. varians*? was taken by us in the dredge.

"*Hippolyte Cranchii*"

Is marked in Mr. J. V. Thompson's collection as Irish.

Pandalus annulicornis, Leach, Mal. pl. 40; Edw. Crust. t. ii. p. 384; Desm. p. 220. pl. 38. f. 2.

Is in Mr. J. V. Thompson's collection. The species has been taken commonly by Mr. Hyndman and myself in the rock-pools accessible at low-water throughout the Down coast, and has been dredged by us in deep water on the north-east coast, and in Killery bay, Connemara. Mr. R. Ball has specimens from the shores about Dublin.

Palæmon serratus, Leach, Mal. pl. 43. f. 1; Edw. Crust. t. ii. p. 389; Desm. p. 234. pl. 40. f. 1.

Astacus serratus, *Penn. Brit. Zool.* vol. iv. p. 25. pl. 17. f. 1.

The prawn, an article of human consumption, is noticed in some of our old county histories, as Harris's 'Down,' Smith's 'Cork and Waterford,' Rutty's 'Dublin.' The last author says, apparently* with reference to this species, that "it was formerly frequent on our coast, but the frost in 1740 destroyed many of them"! vol. i. p. 379. Templeton speaks of it as "once common in Belfast lough; now rare." Some years ago I obtained from this locality a very large specimen, which was taken in a lobster-pot at the entrance of the bay. Here the species has more lately been obtained by the collectors attached to the Ordnance Survey, who likewise procured it at Portrush near the Giant's Causeway. Mr. R. Ball states that at Youghal,

* He refers to Rondeletius for the species meant, a work which I have not at present to consult.

prawns are taken only during the first quarter of flood-tide, and then plentifully : at the South Islands of Arran he captured numbers of them in the summer of 1835, and out of about fifty, found three with *Bopyri* attached.—See 'Annals,' vol. v. p. 256.

Palæmon squilla, Leach, Mal. pl. 43. f. 11–13 ; Edw. Crust. t. ii. p. 390.

Templeton notices this species as "common on the shore of Belfast lough." It is of frequent occurrence in rock-pools throughout the range of the Down coast, and is likewise occasionally taken in deep water with the dredge.

I have met with it commonly in rock-pools about Ballantrae, Ayrshire.

Palæmon varians, Leach, Mal. pl. 43. f. 14–16; Edw. Crust. t. ii. p. 391.

A few examples have been procured in Belfast and Strangford loughs by Dr. Drummond and myself. Leach remarks that the *Astacus squilla* of Pennant may be his *P. varians.*

"*Palæmon Leachii*"

Is the name attached by Mr. J. V. Thompson to an Irish specimen in his collection.

Pasiphaë Sivado, Risso, Hist. Nat. l'Eur. Mérid. t. v. p. 81, ed. 1826; Edw. Crust. t. ii. p. 426.

"In the British Museum there is a specimen so named, and labelled 'Ireland.' From the donor, the Rev. James Bulwer, I learned that it was taken by him in the vicinity of Dublin."—W. T. in 'Annals,' vol. v. p. 256.

[To be continued.]

XVIII.—*Remarks on three species of Marine Zoophytes.* By Arthur Hill Hassall, Esq.

Antennularia arborescens. Polypidom arborescent, arising from a tangled mass of tubular root-like filaments by a single trunk, which subsequently divides and subdivides into numerous branches; branchlets verticillate, long ; cells tubular, not separated from each other by one or more small cup-like processes, as are those of *Antennularia antennina.*

In the 'Annals and Magazine of Natural History,' vol. vi. p. 168, pl. 5, I have described and figured an *Antennularia* which I conceived to be distinct from the common *A. antennina,* and which I then conjectured to be identical with the *Antennularia ramosa* of Lamarck.

The opinion originally entertained of its specific distinctness has recently been confirmed by some observations of Mr. J. Macgillivray, recorded in the ninth vol. of the 'Annals,' by whom many specimens have been found at Aberdeen, agreeing in all respects with my description; but I have since seen reason to discard the notion of its identity with Lamarck's *Antennularia ramosa,* whose description of